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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.		
09/901,484	07/09/2001	Daniel Cohen	GEN-T111XC3D2	6608		
23557	7590 03/02/2005		EXAM	EXAMINER		
SALIWANCHIK LLOYD & SALIWANCHIK A PROFESSIONAL ASSOCIATION PO BOX 142950 GAINESVILLE, FL 32614-2950			FREDMAN, JEFFREY NORMAN			
			ART UNIT	PAPER NUMBER		
			1637			

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

		Application	on No.	Applicant(s)		
Office Action Summary		09/901,48		COHEN ET AL.		
		Examiner		Art Unit		
		Jeffrey Fr	redman	1637		
	The MAILING DATE of this communicatio			orrespondence add	dress	
Period fo	or Reply					
THE I - External form - If the - If NO - Failu - Any r	ORTENED STATUTORY PERIOD FOR R MAILING DATE OF THIS COMMUNICATI nsions of time may be available under the provisions of 37 C SIX (6) MONTHS from the mailing date of this communicati period for reply specified above is less than thirty (30) days period for reply is specified above, the maximum statutory is re to reply within the set or extended period for reply will, by eply received by the Office later than three months after the ed patent term adjustment. See 37 CFR 1.704(b).	ON. FR 1.136(a). In no even on. , a reply within the state period will apply and wistatute, cause the apple.	ent, however, may a reply be timutory minimum of thirty (30) days Il expire SIX (6) MONTHS from t lication to become ABANDONED	ely filed will be considered timely the mailing date of this co (35 U.S.C. § 133).		
_	Responsive to communication(s) filed on	22 December 2	004			
·	·		<del></del>			
· <u> </u>	This action is <b>FINAL</b> . 2b)⊠ This action is non-final.  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.					
Dispositi	on of Claims	, , , , , , , , , , , , , , , , , , ,	2,10,			
<u>4</u> 1⊠	Claim(s) <u>50-53 and 56-66</u> is/are pending	in the application	า			
•	4a) Of the above claim(s) is/are with					
	Claim(s) is/are allowed.					
6)⊠	Claim(s) 50-53,56-59 and 61-66 is/are rej	jected.				
7)🖂	Claim(s) 60 is/are objected to.					
8)□	Claim(s) are subject to restriction a	and/or election re	equirement.			
Applicati	on Papers					
9)□	The specification is objected to by the Exa	aminer.				
10)	The drawing(s) filed on is/are: a)	accepted or b)	$\square$ objected to by the E	xaminer.		
	Applicant may not request that any objection to					
	Replacement drawing sheet(s) including the o					
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.						
_	ınder 35 U.S.C. §§ 119 and 120					
a)[ * S 13)□ A si 3	Acknowledgment is made of a claim for for All b) Some * c) None of:  1. Certified copies of the priority documents.  2. Certified copies of the priority documents.  3. Copies of the certified copies of the application from the International Bese the attached detailed Office action for acknowledgment is made of a claim for doince a specific reference was included in the CFR 1.78.  3. The translation of the foreign languages.	ments have bee ments have bee priority docume ureau (PCT Rule a list of the certimestic priority ur he first sentence	n received. n received in Application received in Application and the received in Application in the received in the specification of the specification or a plication has been received.	on No d in this National a d. ) (to a provisional in an Application a	application) Data Sheet.	
14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.						
Attachment(s)						
2) Notic	e of References Cited (PTO-892) e of Draftsperson's Patent Drawing Review (PTO-94 nation Disclosure Statement(s) (PTO-1449) Paper N		4) Interview Summary ( 5) Notice of Informal Pa 6) Other:			

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#### **DETAILED ACTION**

### Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 22, 2004 has been entered.

### **Priority**

2. The current application claims priority to a series of cases dating back to 1997. However, the claims are not given priority to applications 08/996,306 and 60/099,658 because in the current application SEQ ID NO: 179 is 56,520 nucleotides while in those parent applications, the largest sequences were 56,516 nucleotides. Consequently, there is no possibility that these applications provide full descriptive support for SEQ ID NO: 179, and priority to these applications is denied. Therefore, for purposes of prior art, the priority date of this application is limited to 09/218,207, filed December 22,1998, which provides the full 56,520 nucleotides of SEQ ID NO: 179.

## Claim Rejections - 35 USC § 112

3. The rejection of claims 54 and 55 under 35 U.S.C. 112, first paragraph, is most in view of the cancellation of those claims.

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## Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- 5. Claims 50, 59 and 61-66 are rejected under 35 U.S.C. 102(b) as being anticipated by Weier et al (Hum. Genet. (1991) 87:489-494) as evidenced by Genbank Accession No. AC100813 (March 2003).

Weier et al teaches an isolated human chromosome 8, which was flow sorted to purify the sequence (see abstract and page 490, column 2). The current PG-1 sequences are all derived from chromosome 8 as admitted by the specification at page 28. So chromosome 8 is a sequence of more than 500 nucleotides which comprises SEQ ID NO: 179. The chromosome comprises the complement inherently.

Genbank Accession No. AC100813 has a 99.8% alignment with nucleotides 3899-4996 as shown in the alignment below and represents a sequence within chromosome 8. This sequence comprises a region from nucleotide 51963 to 51354, at least, which is 100% identical so that there is a region of over 600 contiguous basepairs on chromosome 8.

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ORIGIN	DD 0 Targth 165700:
Rest 1	Match 90.7%; Score 996; DB 2; Bength 163737, Local Similarity 99.8%; Pred. No. 0; es 1096; Conservative 0; Mismatches 2; Indels 0; Gaps 0;
Qy	1 GTTTCTTGTTCCTGCATTTTTATTTTTTTTTGTATGGAGGGGACAAATAATTATTTTCTGT 60 /
Db	52074 GTTTCTTGTTCCTGCATTTTTATTTTTATTGTATGGAGGGGACALLTTT
Qy	61 TTAGTAACAGAGCAGGGTATTTTGAATTTATTAGGGTCTTTTTCTGCAGTCTGGGTTTCC 120
Db	52014 TTAGTAACAGAGCAGGTATTTTGAATITATTAGGGTCTTTTTTTTTAACATTAATCAATAG 180
Qy	121 TGTGTACACAAAGCTACCTTTCAATATTTTTATTGTTTCTTTTATTGTTTAAAATCAATAG 51895 51954 TGTGTACACAAAGCTACCTTTCAATATTTTTTATTGTTTCTGTTAAGATTAAATCAATAG 51895
Db	COLDANGE DE LA COLDAN
Qy	181 AGGAATAAATAGCTATCTTCAAACATAAGACCCAAAGGAAAAACATTTTTTTT
Db	ACCOUNTS ACC
ДУ	241 TGTCACCTTATTTTTACCTGIGGETIIGIACTIIGIACTIIGIACTIIGIACTTTGTCACTGAGATGTTTTGA 51775 51834 TGTCACCTTATTTTTTACCTGTGACTTTGTCACTTACTTTGTCACTGAGATGTTTTGA 51775
Qy	301 TTAAAATTTTTAGCTTGCTTTTCTTGTTTTGTTAGGACACTCTTTTTTTCTTGAATTGTT 360
Db	51774 TTAAAATTTTTAGCTTGCTTTCTTGTTTTGTTAGGACACTCTTTTTTTT
Qy	361 TTTATCAGCTTTCGTTTGCAAGGCTAGTGATGATTCTCTTGTTCTGTATAAAGTATTGTT 420
Db	51714 TTTATCAGCTTTCGTTTGCAAGGCTAGTGATTGTGTTGTT
Qy	421 GACTCATTTCTGAAGGGAGTTTTAGTAATTTAAGAGGTTATAAGTTTTTAAATAAAAGGT 480
Dр	51654 GACTCATTTCTGAAGGGGGTTTTAGTAATTTAAGAGTTTTTTAAATGACATTT 540
Qy 	481 TTATTAATTTATATATTATAAAGAGGCATTTTAAAATAGAGGCATTT 51535 51594 TTATTAATTTATATATATATATAAAGAGGCATTTTAAAATAAAATTTTTTTT
Db	CONTRACTOR AND ACTION OF CONTRACTOR OF A CONTR
Qy Db	51534 TTACACCTTTCAACTCTAGGTTTAAAAAATAAGTGGTTCACAGTAGTTCTTGCAGAAGAA 51475
Qy	601 TATTTTCTTTTACATAGAATTTTTAAGCTGAAGAGAAGTAGTAGTAGGTCCATGAGATTT 660
Db	51474 TATTTTCTTTTACATAGAATTTTTAAGCTGAAGAAGTAGTAGTAGGTCCATGAGATTT 51415
Qy	661 ATGATCTGTGCTTGGCAGGTAAACCTGCTTCCAACAAATTTAGTTGGATTTTTCTTGGAT /20
Db	51414 ATGATCTGTGCTTGGCAGGTAAACCTGCTTCGTAGATCA
Qy	721 TCTGGGTAAATACCTTTTTCTTCCCCAGTTTCACTACTTTATTTTCATATGTATCTCTGA 780
Db	51354 TCTGGGTAAATACCTTTTTCTTCCCCAAATACCTTTTATCCTTT 840
Qy	781 GATAGAGAAATATTTCAGTCAGTGCTGCTAAAATTGTTCC11ATAACTCIIIIIIIIIIIIIIIIIIIIIIIIIII
Dр	900 and a procedure of the contract of the con
Qy	TAGGTCCTTCCAGAATCTCTCATTGGTACTGAAACTCAAATGGGTACTTTCTTCACCATT 51175
Db Qy	901 TATTTCTTTAGAATAAGTAATAAGAATTTTATAAGCTTTTTTATATTTCACGTAATTTGA 960
Dp	51174 TATTTCTTTAGAATAAGTAATAAGAATTTTATAAAGCTTTTTTATATTTCACGTAATTTGA 51115
Qу	961 GACTATTGAAAATCCAGTTAAGTCTCTCTACTGTGTTGAGAGGCATTGATTCAAGTACCT 1020
Dр	C1114 CACTATIGAAAAICCAGIIAGICIC
Qу	1021 GTGTTACTTTCCTGTGCTGCCAAAACAGATCACCTCAAACTAAGCGGCTTAAAATAATAG 1080
DЪ	51054 GTGTTACTTTCCTGTGCTGCCAA2TTCTCT
Qy	1081 AACTTAAGTTCTCGTGAT 1098
Db	50994 AACTTAAGTTCTCGTGAT 50977

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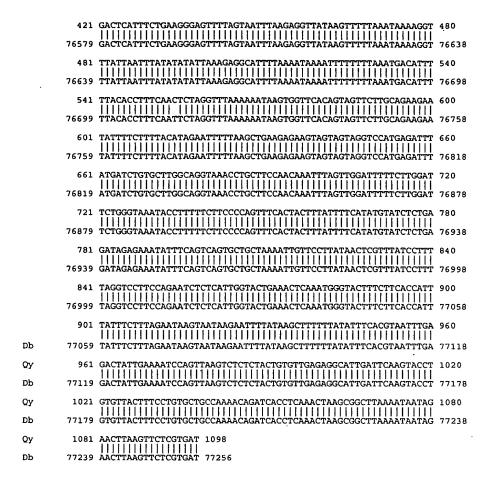
6. Claims 50-52, 56-59 and 61-66 are rejected under 35 U.S.C. 102(a) and (b) as being anticipated by Osoegawa et al (Genomics (1998)52:1-8) as evidenced by Genbank Accession No. AC022578 and an email from Pieter de Jong (attached).

Osoegawa teaches synthesis of BAC chromosome libraries (abstract). In particular, Osoegawa teaches the synthesis of a particular BAC library termed RPCI-11 (also called RP11) which was grown in bacterial host cells using recombinant vectors which were placed onto filters and the nucleic acid was isolated (page 2 and page 3, column 1).

A specific isolated BAC, RP11-15C20, which is in a composition of this library and which is at a specific location on the arrays sold by the BACPAC consortium, comprises 543 contiguous nucleotides from nucleotides 3899-4996 of SEQ ID NO: 179 (see nucleotides 555-1098 of the query sequence). As shown by the alignment below, this BAC has close match with the reference sequence.

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The email of Pieter de Jong indicates that filters from the RPCI-11 library were first publicly available, used and sold on August 1, 1997. As shown by the alignment above, the filter with RP11-15C20 inherently comprises 543 contiguous nucleotides from nucleotides 3899-4996 of SEQ ID NO: 179.

With regard to claim 51, Osoegawa teaches that the sequences were in Bac vectors (see page 1, column 2, subheading "BAC/PAC vector preparation").

With regard to claim 52, Osoegawa teaches that the vectors were in bacterial host cells (see page 2, column 1).

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With regard to claim 56, Osoegawa teaches that the sequences were in vectors, and the vector sequence can function as a label for the detection of the target sequence (see page 1, column 2. To explain, a DNA sequence may itself be a label, and frequently is used as such, since specific DNA can be detected by hybridization).

With regard to claims 57-58, Osoegawa teaches that the oligonucleotide is attached, indirectly, to a solid support (see page 2, column 1 and email, where filters were sold).

With regard to claims 59 and 61-66, Osoegawa teaches a library which would comprise the RPCI-11 library, which Genbank Accession No. AC022578 shows has 543 contiguous nucleotides in the claimed region (see alignment above).

### Claim Rejections - 35 USC § 103

- 7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osoegawa et al (Genomics (1998)52:1-8) in view of Capecchi et al (Science (1989) 244:1288-1292).

Osoegawa teaches vectors that comprise sequences of interest as discussed above.

Capecchi teaches the use of homologous recombination to form host cells and mammals (see page 1280, figure 1, for example).

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to screen each of the sequences of Osoegawa for functional activity using the homologous recombination method of Capecchi since Capecchi states "Targeted disruption of these genes may not only reveal the phenotypes associated with inactivation of the individual genes, but through epistasis and molecular analyses, may also help define the developmental network controlling early mouse morphogenesis (see page 1292, column 1)." Thus, an ordinary practitioner, interested in identifying what phenotype is associated with the sequence of the sequences of Osoegawa would have been motivated by Capecchi to use targeted disruption in order to define the phenotype of the genes with which the sequence of Osoegawa are associated.

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### Allowable Subject Matter

10. Claim 60 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: Claim 60 is drawn to the complete SEQ ID NO: 179. No such sequence was found in the sequence search and while the evidence from the chromosome 8 hits is that there is generally 99.8% or so alignment with hundreds of contiguous basepairs, there is no evidence that Weier is inherently identical over the entire length of SEQ ID NO: 179. Therefore, the claim to the entire sequence is novel and unobvious.

### Response to Arguments

12. Applicant's arguments filed December 22, 2004 have been fully considered but they are not persuasive.

Applicant argues that the Gu reference should fall because there is no evidence that chromosome 8 inherently comprises the sequence of the claimed invention. The rejection has been amended to cite an evidentiary reference which shows a chromosome 8 sequence that is highly identical to claimed sequence. This provides the evidence necessary to establish that chromosome 8 more likely than not inherently teaches a sequence meeting the requirements of the claims under rejection.

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#### Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Fredman whose telephone number is (571)272-0742. The examiner can normally be reached on 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (571)272-0782. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeffrey Fredman Primary Examiner

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